

## CLAIMS:

1. A method of analyzing an object data set which comprises points in a multi-dimensional space and in which a tubular structure occurs, said method comprising the following steps:
- a) choosing a starting position in or near the tubular structure;
  - 5 b) deriving a cutting plane through the tubular structure at the starting position,
  - c) determining a number of points forming part of the surface of the tubular structure in the vicinity of the starting position, and
  - d) calculating a gradient to the surface for each of said points;
- characterized in that the method also comprises the steps of:
- 10 e) determining for each point a vector from the center of the tubular structure to said point;
  - f) determining the angle between said vector and the gradient at said point;
  - g) adding said point to a selection of points if said angle is equal to or smaller than a predetermined ceiling value;
  - h) using said selection of points to calculate an orientation for the cutting plane such that the
  - 15 direction thereof is as parallel as possible to the longitudinal axis of the tubular structure at the starting position, and
  - i) repeating the steps a) through h) for a new starting position along the tubular structure if necessary.
- 20 2. A method as claimed in claim 1, also comprising the steps of:  
defining a sphere, which is at least partially intersected by the tubular structure, and  
performing the steps e) through g) only for points lying inside the sphere.
3. A method as claimed in claim 1 or 2, wherein the steps e) through g) are
- 25 performed only for points lying at a predetermined maximum distance from the cutting plane.
4. A computer program for carrying out the method as claimed in one or more of the preceding claims.